

Abstract of the Disclosure

A selectable waveguide transitions between two positions to at least two independent signals by their polarization or frequency. This waveguide consists of dissimilar wave sections coupled to an antenna feed and is mechanically actuated for signal selection switching to route signals to output ports and respective probes that are polarization sensitive. The waveguide sections offer high polarization purity so that signal components remain separated to avoid mutual interference and low insertion loss to maintain system efficiency. Selectable waveguide can be extended for multiple polarization and frequency operation. Frequency selective surfaces and tapers establish pass bands and attenuation levels for frequency selection. The selectable waveguide is suitable for both frequency and polarization selectively in antenna system. Selectable waveguides can be cascaded and mechanically actuated for creating selectable waveguides arrangements enabling a wide variety of frequency and polarization selectively operating through a single apparatus.

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